

REMARKS

Claims 11-20 are pending in the present application. New claims 31-43 have been added.

Reconsideration of the application is respectfully requested in view of the following responsive remarks. For the Examiner's convenience and reference, Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

In the Office Action of July 20, 2006, the following actions were taken:

(1) Claims 11-20 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite.

(2) Claims 11-14 and 16-19 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,551,695 to Kaneko et al. (hereinafter "Kaneko").

(3) Claims 15 and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kaneko.

It is respectfully submitted that the presently pending claims be examined and allowed. Applicants submit that each and every amendment herein, and throughout the prosecution of the present application is fully supported by the specification as originally filed, and that no new matter has been added.

Rejection under 35 U.S.C. § 112, second paragraph

The Examiner has rejected claims 11-20 under 35 U.S.C. § 112, second paragraph as being indefinite for two reasons:

a. Use of the term "semi-metal": The Examiner has suggested that "semi-metal," rather than being a definitive term, is in fact a relative term. On the contrary, the term "semi-metal" is understood in the art as referring to certain metalloid elements, each having properties of metals to an inferior degree. Examples of such elements are silicon, arsenic, and bismuth. Therefore, silica (SiO₂) is an example of a semi-metal oxide in accordance with the present invention.

b. Use of the phrase "inorganic metal or semi-metal oxide particulates": The Examiner has stated that this phrase is unclear, particularly that it is unclear between what substances this disjunctive phrase requires a choice. As stated in the Applicant's

specification, particulates to be used in the present invention may be either inorganic metal oxides (such as titania) or semi-metal oxides (such as silica). By the present amendment, the phrase in question has been changed to read "inorganic metal oxide or semi-metal oxide particulates," providing a clearer articulation of this choice.

Applicant submits that the claims as currently presented are definite under § 112 and respectfully requests that these rejections be withdrawn.

Rejections under 35 U.S.C. § 102

The Examiner has rejected claims 11-14 and 16-19 under 35 U.S.C. 102(e) over Kaneko. Before discussing the rejections, it is thought proper to briefly state what is required to sustain such a rejection. It is well settled that "[a] claim is anticipated only if each and every element as set forth in the claims is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil of California*, 814 F.2d 628, 2 U.S.P.Q. 2d 1051, 1053 (Fed. Cir. 1987). In order to establish anticipation under 35 U.S.C. § 102, all elements of the claim must be found in a single reference. *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 231 U.S.P.Q. 81, 90 (Fed. Cir. 1986), *cert. denied* 107 S.Ct. 1606 (1987). In particular, as pointed out by the court in *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1981), *cert denied*, 469 U.S. 851 (1984), "anticipation requires that each and every element of the claimed invention be disclosed in a prior art reference." "The identical invention must be shown in as complete detail as is contained in the...claim." *Richardson v. Suzuki Motor Co.* 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989).

As now presented, claims 11-13 and 15-19 provide a method of preparing a media sheet by applying an ink-receiving layer to a media substrate, where the ink-receiving layer includes inorganic metal oxide or semi-metal oxide particulates and a sulfur-containing compound, wherein at least a portion of the sulfur-containing compound is chemically attached to at least one of the said particulates. Kaneko fails to teach attachment of sulfur-containing compounds to metal oxide or semi-metal oxide particulates. As the Applicant has discussed in the specification, such an attachment involves both an inorganic particulate and a sulfur-containing compound reacting with appropriate reactive groups (i.e. one that is functionally reactive with the selected metal oxide or semi-metal oxide) as well as often with an appropriate spacer.

In contrast, Kaneko merely teaches the addition of a silica and a sulfur-containing compound to a coating solution without the appropriate reagents or process to bring about attachment. Applicant asserts that, contrary to the Examiner's suggestion that "chemical attachment inherently occurs," such attachment is not favored where oxide particulates and a sulfur-containing compound are merely applied in the same composition. To form affirmative attachments, reactive groups are attached to the semi-metal oxide or metal oxide particulates. In these types of systems, reactions that form attachments do not just typically occur just by mere mixing. Though there may be some ionic or other attraction between different components in the prior art, forming an attachment between the particulates and the sulfur-containing compound is required by the claims. As such, Kaneko does not anticipate claim 11 or the claims depending therefrom because it fails to teach a required element of those claims, i.e. attachment of sulfur-containing compounds to metal oxide or semi-metal oxide particulates. Applicant therefore respectfully requests that this rejection be withdrawn.

Rejections Under 35 U.S.C. § 103

The Examiner has rejected claims 15 and 20 as being obvious in view of Kaneko. Both of these claims depend from claims that Applicant has asserted are novel over Kaneko in light of the present amendment, as discussed above. Applicant therefore submits that this rejection is rendered moot and should be withdrawn. However, since new claims are presented that are directed to subject matter addressed in the rejections made in the July 20, 2006 Office Action (claims 15 and 20 rewritten as independent claims 31 and 38, respectively), Applicant deems it appropriate to address the patentability of these new claims over Kaneko under this section.

First, claims 31-37 are directed to a method of preparing a media sheet including a coating process in which a media substrate is coated with a first coating composition including inorganic metal oxide or semi-metal oxide particulates and a polymeric binder, then the first coating composition is overcoated with a second coating including a sulfur-containing compound. As the Examiner has acknowledged, Kaneko discloses print media in which the sulfur-containing compound is applied in the same composition as the binder and the particulates. In particular, Applicant directs Examiner to col. 28, lines 1-7 of Kaneko in which the "specific [sulfur-

containing] compound” is added to the coating solution for forming the ink-receiving layer, said solution containing fumed silica and polyvinyl alcohol binder as described at col. 27 lines 1-14. As Kaneko clearly teaches the application of a coating solution including silica and a sulfur-containing compound, present claims 31-37 are patentable over that reference because this reference does not teach or suggest sequentially applying these materials in separate coatings.


Second, claims 38-42 are directed to a method of preparing a media sheet including applying a porous ink-receiving layer that includes an effective amount of thiodiethanol. Applicant submits that Kaneko cannot be considered to teach the use of this compound simply because, as Examiner has noted “various thioethers are diagrammed with –OH groups.” This is particularly true in that the thioether alcohols disclosed by Kaneko all incorporate aromatic groups, which thiodiethanol lacks. See col. 8, lines 6-62. Therefore, Applicant submits that claims 38-42 are patentable over Kaneko because that reference does not teach or suggest the specific use of thioethanol as required in the present claims.

In view of the foregoing, Applicants believe that the present claims present allowable subject matter and allowance is respectfully requested. If any impediment to the allowance of these claims remains after consideration of the above remarks, and such impediment could be removed during a telephone interview, the Examiner is invited to telephone W. Bradley Haymond (Registration No. 35,186) at (541) 715-0159, or the undersigned, so that such issues may be resolved as expeditiously as possible.

Please charge any additional fees except for Issue Fee or credit any overpayment to Deposit Account No. 08-2025

Dated this 20th day of October, 2006.

Respectfully submitted,



Gary P. Oakeson
Attorney for Applicant
Registration No. 44,266

THORPE NORTH & WESTERN, LLP
8180 South 700 East, Suite 200
Sandy, Utah 84070
(801) 566-6633

On Behalf Of:
HEWLETT-PACKARD COMPANY
1000 NE Circle Blvd., m/s 422B
Corvallis, OR 97330-4239
(541) 715-0159